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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,249

06/09/2006

Daisuke Kumaki

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31780

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EXAMINER

CAO, PHAT X

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/582,249	<b>Applicant(s)</b> KUMAKI ET AL.	
	<b>Examiner</b> Phat X. Cao	<b>Art Unit</b> 2814	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 March 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7, 16, 17, 22-24, 28, 37 and 38 is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-15, 18-21, 25-27 and 29-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. The Request for Continued Examination in reply filed on 03/09/10 is acknowledged.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 8-15, 18-21, 25, and 29-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Liao et al (US 6,717,358).

Regarding claims 1 and 4, Liao (Fig. 1) discloses a light emitting element comprising: a 1<sup>st</sup> EL UNIT 120.1 of **HTL/ETL** (not shown, see column 5, lines 61-65) including a first layer **HTL** (hole transporting layer) for generating hole (or p-type) and a second layer **ETL** (electron transporting layer) for generating an electron (or n-type); and a third layer 120.2 comprising a light emitting substance (EL UNIT), wherein the first layer, the second layer and the third layer are interposed between a first electrode 110 and a second electrode 140; wherein the second layer is interposed between the first layer and the third layer; wherein the first layer HTL is physically in contact with the first electrode 110; and wherein the light emitting element emits light when a voltage is applied between the first electrode 110 and the second electrode 140 such that a potential of the second electrode is higher than that of the first electrode.

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Regarding claim 2, Liao (Fig. 1) discloses a light emitting element comprising: a 1<sup>st</sup> EL UNIT 120.1 of **HTL/ETL** (not shown, see column 5, lines 61-65) including: a first layer **HTL** (hole transporting layer) for generating hole and a second layer **ETL** (electron transporting layer) for generating an electron, a first layer HTL comprising a first substance and a second substance (column 8, lines 15-55), and a second layer ETL comprising a third substance and a fourth substance (column 7, lines 45-67 through column 8, lines 1-15); and a third layer 120.2 comprising a light emitting substance (EL UNIT); wherein the first layer HTL has a hole transporting property of the first substance being stronger than an electron transporting property thereof and the second substance having an electron accepting property to the first substance (column 8, lines 15-55), wherein the second layer ETL has an electron transporting property of the third substance being stronger than a hole transporting property thereof and the fourth substance having an electron donating property to the third substance (column 7, lines 45-67 through column 8, lines 1-15), wherein the first layer, the second layer and the third layer are interposed between a first electrode 110 and a second electrode 140; wherein the second layer is interposed between the first layer and the third layer; wherein the first layer HTL is in physically contact with the first electrode 110; and wherein the light emitting element emits light when a voltage is applied between the first electrode 110 and the second electrode 140 such that a potential of the second electrode is higher than that of the first electrode.

Regarding claim 5, Liao (Fig. 1) discloses a light emitting element comprising: a 1<sup>st</sup> EL UNIT 120.1 of **HTL/ETL** (not shown, see column 5, lines 61-65) including: a first

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layer **HTL** comprising a first substance (NPB – column 8, lines 15-55) and a second substance (molybdenum oxide - column 8, lines 56-67 through column 9, lines 1-15), and a second layer **ETL** comprising a third substance (ALq - column 7, lines 45-59) and a fourth substance (Li - column 7, lines 60-67 through column 8, lines 1-15); and a third layer 120.2 comprising a light emitting substance (EL UNIT); wherein the first layer, the second layer and the third layer are interposed between a first electrode 110 and a second electrode 140; wherein the second layer is interposed between the first layer and the third layer; wherein the first layer HTL is in physically contact with the first electrode 110; and wherein the light emitting element emits light when a voltage is applied between the first electrode 110 and the second electrode 140 such that a potential of the second electrode is higher than that of the first electrode.

Regarding claims 3, 6, 8-15, and 25, Liao (Fig. 1) further discloses that a molar ratio of the second substance to the first substance is 0.01 to 20 (column 7, lines 33-43), and the light emitting element is incorporated into a display portion of an electronic appliance (column 2, lines 1-15).

Regarding claims 18-21 and 29-36, Liao (Fig. 1) further discloses that the third layer 120.2 is in contact with the second electrode 140, the first layer HTL is in contact with the second layer ETL, and the second layer ETL is in contact with the third layer.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liao et al (US 6,717,358).

Liao discloses that the first substance (hole transporting layer) is NPB or TPD (column 8, lines 15-34) but does not disclose that the first substance is DNTPD.

However, it has been held that selecting a known material on the basis of its suitability for the intended use is a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. There was absent evidence of disclosure of criticality for selecting a first substance including DNTPD as claimed. Therefore, it would have been obvious to substitute DNTPD as claimed for the first substance of Liao because of their equivalence for their use in the semiconductor art as the hole transporting materials and the selection of any of these known equivalents to be used as a hole transporting material for the first substance of Liao would be within the level of ordinary skill in the art.

#### ***Allowable Subject Matter***

6. Claims 7, 16-17, 22-24, 28, and 37-38 are allowed.

The prior art of record neither anticipates nor renders obvious all of the limitations recited in the base claim 7, including a thickness of the first layer and a thickness of the second layer satisfying expressions as claimed.

#### ***Response to Arguments***

7. Applicant's arguments with respect to amended claims have been considered but are moot in view of the new ground(s) of rejection.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phat X. Cao whose telephone number is (571)272-1703. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571)272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. X. C./  
Primary Examiner, Art Unit 2814

/Phat X. Cao/  
Primary Examiner, Art Unit 2814